25

11

network is a second CDMA network operating on a different frequency than the first CDMA network.

14. The method of claim 10 wherein the first cellular network is a CDMA network and the second cellular network is an AMPS network.

15. In a CDMA cellular network overlaid on an AMPS cellular network, an apparatus for performing a handoff of a call from a mobile unit in a CDMA cell site of the CDMA cellular network wherein the CDMA cell site is co-located with an AMPS cell site of the AMPS cellular network, the 10 apparatus comprising:

means for measuring a round trip delay ("RTD") value representing a distance from the mobile unit to the CDMA cell site of the call;

means for comparing the RTD value with a first predetermined value;

means responsive to when the RTD value exceeds the first predetermined value, for handing off the call to a second CDMA cell site if one is available and if no other CDMA cell site is available for handoff, for handing off the call to the AMPS cell site.

means for comparing the RTD value with a second predetermined value before comparing the RTD value with the first predetermined value; and

means responsive to the RTD value exceeding the second predetermined value for determining whether any other CDMA cell site is available for handoff.

**16.** The apparatus of claim **15** wherein the first predetermined value is an RTD threshold representing a distance 30 from the CDMA cell site area within specific boundaries of the AMPS cell site.

17. The apparatus of claim 16 wherein the specific boundaries of the AMPS cell site are boundaries between the AMPS cell site and other cell sites of the AMPS cellular 35 network that are adjacent to the AMPS cell site but not co-located with cell sites from the CDMA cellular network.

- 18. The apparatus of claim 15 wherein the first and second predetermined values are RTD thresholds representing a first and second radius, respectively, from the CDMA cell site 40 defining a first and second area, respectively, completely served by the AMPS cell site such that the second radius is less than the first radius.
- 19. The apparatus of claim 15 wherein the means for determining whether any other CDMA cell site is available 45 for handoff includes:

means for receiving a pilot signal from other CDMA cell sites;

12

means for measuring a strength of the detected pilot signal;

means for comparing the measured strength of the detected pilot signal to a predefined limit;

means for adding the detected pilot signal to an active pilot list if the measured strength exceeds the sum of the predefined limit and a hysteresis limit; and

means for removing the detected pilot signal from the active pilot list if the strength of the pilot signal falls below the predefined limit.

20. In a first cellular network bordering a second cellular network, a first cell site for serving a call and supporting a handoff of the call, wherein the first cell site is co-located with a cell site of the second cellular network, the first cell site comprising:

- a round trip delay ("RTD") measurement device for determining a RTD distance from a mobile unit making the call to the first cell site;
- a first comparator for comparing the RTD with a first predetermined value;
- selector logic, responsive to when the RTD distance exceeds the first predetermined value, for determining if a second cell site in the first cellular network is a potential cell site for handoff;
- a second comparator for comparing the RTD distance with a second predetermined value; and

handoff logic for handing off the call in response to the RTD exceeding the second predetermined value, wherein the handoff logic performs a handoff to the second cell site if the selector logic determined that the second cell site is a potential cell site for handoff and the handoff logic performs a handoff to the cell site of the second cellular network if the selector logic determined that the second cell site is not a potential cell site for handoff.

21. The first cell site of claim 20 wherein the first and second predetermined values are RTD thresholds representing a first and second radial distances, respectively, from the first cell site and wherein the first radial distance is less than the second radial distance, which is less than a distance from the first cell site to a handoff boundary used by the cell site of the second cellular network.

\* \* \* \* \*